

**GOLF BALL CORE COMPOSITIONS CONTAINING HIGH VICAT SOFTENING  
TEMPERATURE, RESILIENT THERMOPLASTIC MATERIALS**

**ABSTRACT**

5           The invention is directed to golf ball core compositions comprising at least  
one natural or synthetic rubber and at least one high Vicat softening temperature  
thermoplastic material, methods of preparing the compositions, and golf ball cores and golf  
balls including the compositions. The compositions of the invention are made by mixing at  
least one natural or synthetic rubber and at least one thermoplastic or thermoplastic  
10 elastomer at a first temperature; cooling the mixture to a second temperature which is below  
an activation temperature of a free-radical initiator; adding the free-radical initiator to the  
first mixture to form a second mixture; and heating the second mixture to a third  
temperature that to facilitate crosslinking. The golf ball cores are incorporated into  
multilayer balls including dual cover balls with thin outer layers.

15

20

25

30

35